Responsiveness Summary

Engineering Evaluation and Cost Analysis (EE/CA)
Non-Time Critical Removal Action for Off-Site Groundwater
Westinghouse Former Fuel Cycle Facility ("FFCF") Site
Hematite, Missouri

I. Introduction

Westinghouse Electric Company LLC ("Westinghouse"), in conjunction with the Missouri Department of Natural Resources ("MDNR"), recently completed an Engineering Evaluation and Cost Analysis ("EE/CA") to evaluate potential response actions that could be taken to address the presence of volatile organic compounds ("VOCs") in groundwater in the vicinity of the Westinghouse FFCF Site. The evaluation of groundwater conditions and potential alternatives to address these conditions was conducted as a non-time critical removal action in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§9601, *et seq*., the National Contingency Plan ("NCP"), 40 C.F.R. Part 300, and U.S. EPA guidance. Westinghouse already has initiated a more expedited response to these conditions through implementation of the June 2002 Action Memorandum (*i.e*., installation of point-of-entry water treatment systems and providing bottled drinking water to specified homes in the area). The EE/CA is designed to evaluate the appropriateness of a more permanent solution to this condition.

In cooperation with MDNR, Westinghouse has initiated a very extensive community outreach program regarding the groundwater impacts identified in the vicinity of the Site.

A public comment period regarding the EE/CA was begun at a public meeting that was held on January 28, 2002. Public Notice of the EE/CA and associated comment period was provided on January 21, 2003 to local television and radio stations and newspapers, including the St. Louis Post-Dispatch, Suburban Journals, and Jefferson County Leader. The public was notified that an information repository was established in the Festus Public Library, and that the EE/CA and documents relating to it were available there during normal business hours. The public was also notified that the EE/CA was posted for viewing on an MDNR web page. Westinghouse also hosted a community work group meeting on February 3, 2003 that included local elected officials. Westinghouse issued several press releases regarding the EE/CA, and the EE/CA was the subject of numerous articles in local newspapers. Public comments were accepted until February 28, 2003.

Several comments were received from the public during the public comment period. Generally, the public is supportive of the proposed alternative. MDNR and the Missouri Department of Health and Senior Services ("DHSS") also have been consulted with respect to the EE/CA, and have indicated their respective support for the selected alternative (Alternative 4).

The selection of Alternative 4 is documented in the Action Memorandum that is being issued contemporaneously with this Responsiveness Summary. In response to several of the public's comments and concerns, the Action Memorandum expands upon and clarifies several portions of the EE/CA. These clarifications do not significantly alter the proposed response action.

A number of comments received during the public comment period addressed issues that were not wholly germane to the actions to take place pursuant to the EE/CA. Although responses to these comments are beyond the scope of this Responsiveness Summary, Westinghouse appreciates having the opportunity to gain the commenters' perspective on these issues.

II. The oral and written comments included the following significant issues or questions:

The site history section in the EE/CA is not complete.

During the more than 40 years of operation at the Hematite facility, there have been numerous owners and operators, as well as different processes and waste management practices at the plant. Westinghouse acquired the plant in April 2000. Prior owners included Asea Brown Boveri (ABB) from 1989-2000, Combustion Engineering (CE) from 1974 to 1989, Gulf United Nuclear Fuels Corporation from 1970 to 1974, United Nuclear Corporation from 1961 to 1970, Mallinckrodt Nuclear Corporation from 1959 to 1961, and Mallinckrodt Chemical Works from 1956 to 1959.

Westinghouse has investigated the site history in support of the Remedial Investigation and Feasibility Study ("RI/FS") Work Plan and the EE/CA, and will continue to investigate and refine it as more information is developed. However, our understanding of the site history to date is sufficient to support today's decision.

The site history and local conditions confirm that Westinghouse did not cause the problem that is addressed in the EE/CA. Westinghouse prepared the EE/CA as an accelerated response under CERCLA to respond to the impacted private wells in a timely manner. While Westinghouse is proceeding in cooperation with MDNR, it is preserving its rights to recover costs from other parties that it believes are responsible for the existing conditions, including the private well contamination.

The EE/CA should include a buyout option.

Westinghouse believes that inclusion of a buyout option in the EE/CA is inappropriate for the following reasons:

1. The preferred alternative directly addresses the identified conditions in a timely and cost effective manner.

The focus of the EE/CA is relatively narrow – to evaluate several alternatives that are designed to address potential human health risks associated with impacted groundwater in the vicinity of the FFCF Site. The preferred alternative identified in the EE/CA (Alternative 4) is protective of human health and directly addresses the identified conditions in a timely and cost effective manner. The risk is associated with exposure to impacted groundwater. Each of the three alternatives (excluding the no action alternative) includes technically acceptable demonstrated methods to address this exposure pathway. This approach was approved by MDNR and is consistent with U.S. EPA policy and guidance to address risks posed by contamination. Well-designed methods, which allow people to remain safely in their homes, were followed to determine the appropriate alternative.

Westinghouse understands that buyouts have been considered or offered in situations at other sites where there have not been technically proven cost effective technologies to address the risks associated with the identified contaminants. That is not the case here.

2. A buyout (permanent relocation) is not part of an EE/CA (*i.e.,* Removal Action).

According to U.S. EPA guidance, Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions, decisions on permanent relocation should be based on detailed site information – typically a full remedial investigation. That detailed information is not yet available for this site. Furthermore, the preamble to the NCP clarifies that permanent relocation is not authorized as part of a removal response in 50 Fed. Reg. 37625 (September 16, 1985).

3. A buyout option presents significant implementability concerns.

A buyout option is likely to have numerous "implementability" issues associated with it. These issues arise from anticipated difficulties in relocating residents or dealing with local residents who do not care to move. These issues would likely result in time delays and unquantifiable costs.

What were the criteria for selection of the homes in the proposed area for public water supply extension?

The extent of private well impacts has been identified based on the Interim Hydrogeologic Investigation to Support the EE/CA for Response Actions for Off-site Groundwater Quality Impacts (LBG, November, 2002) and the private well sampling performed by Westinghouse, the Missouri Department of Health and Senior Services (DHSS), and the MDNR. The affected wells include seven wells east/southeast of the former plant site and one well directly east of the site. Groundwater flow in the bedrock (where the private wells withdraw water) is generally to the east/southeast of the former plant.

Knowledge of the location of existing impacted private wells, along with the groundwater flow direction, was the basis of the selection of the area for the proposed water supply

extension. It includes the eight impacted private wells, along with 16 other wells that, based upon our current understanding of groundwater flow, may be impacted in the future.

The groundwater conditions will be periodically evaluated to assure that conditions do not significantly change over time by sampling of sentry (monitoring) wells and select private wells. There will also be a parallel effort associated with the Remedial Investigation/Feasibility Study (RI/FS) that will identify the extent of contamination associated with the FFCF Site and assess remedial options.

Who is going to pay and how much will it cost?

Westinghouse has publicly announced its support for Alternative 4 (extension of public water supply) as described in the EE/CA, and has repeatedly stated that it will pay the capital costs to implement this alternative. As noted above, while Westinghouse is proceeding in cooperation with MDNR on this matter, it is preserving its rights to be reimbursed by other parties that it believes are responsible for existing conditions, including the offsite groundwater impacts.

The total cost to implement this alternative is estimated in the EE/CA at $922,598. The MDNR and DHSS concur with the selection of Alternative 4. The letters that transmit those agencies' support for Alternative 4 are available in the information repository.

Westinghouse's commitment to incur the costs for implementation of Alternative 4 includes the costs of installation of the main, meters, and lateral lines (residential connections), as well as the abandonment of existing private wells. In exchange for this commitment, and as part of the alternative selected, Westinghouse is requesting that residents agree to abandon their existing wells and that no additional wells will be installed on their property.

As previously relayed, Westinghouse anticipates that 3-4 contractors will be identified and pre-qualified to install the lateral connections to the homes in the area. The residents will select and directly coordinate with one of those contractors to complete their connection. The bills from the contractor's work will be sent directly to Westinghouse. This approach is expected to minimize the resident's inconvenience and assure their satisfaction with the installation.

How have the costs been determined?

The cost of the individual alternatives in the EE/CA was determined by standard cost estimating mechanisms, which include identification of unit costs for identified (assumed) quantities and an implementation schedule for the components of each alternative. Unit costs were estimated based on information from local suppliers or vendors and a preliminary schedule for implementation of each alternative. Those assumptions are described in the text of the EE/CA. The anticipated costs are evaluated on a total cost and net present worth basis. The net present worth analyses includes assumptions regarding inflation and discount factors to estimate the present day cost of

each alternative. Thus, the net present worth calculation "adjusts" the long-term costs of an alternative to present day dollars so that it can be evaluated with other alternatives that may have different cost outlay schedules.

What happens if there is a change in the groundwater contamination?

The information gathered to date adequately characterizes groundwater conditions to support this non-time critical removal action. The preferred alternative under the EE/CA also contains a continuing monitoring component, which consists of periodic monitoring of groundwater monitoring (sentry) wells and select private wells to document conditions over time. There will be a parallel effort associated with the Remedial Investigation/Feasibility Study (RI/FS) that will identify the extent of contamination from the site and assess necessary remedial options.

The data from the sentry wells is expected and intended to provide advance warning of, and allow ample time to respond to, a potential change in conditions. The design contractor for the public water system extension will assure that the water mains have sufficient capacity for future expansion if a change in conditions makes such action necessary.

Residents in the area where the extension of public water is proposed should be compensated for the loss of their private well.

As noted above, the focus of the EE/CA and this non-time critical removal action is to address potential risks associated with impacted groundwater in the vicinity of the FFCF Site. Issues relating to compensation for alleged damages and losses are not appropriate in this context. That being said, Westinghouse notes that there are several benefits related to the use of public water. For example, there is ample evidence that residential property values are generally higher with public water, and that the availability of public water (fire hydrants) generally results in a decrease in home insurance costs.

In addition, homeowners that utilize public water systems also avoid routine costs for operation and maintenance of private water supply wells. These items include power costs, and maintenance or replacement costs for pumps, pressure tanks and valves over a typical 15-25 year operating life. A public water supply system, such as that proposed by connection to PWSD#5 (Alternative 4), provides more predictable service in terms of duration, quality and quantity. Public water service is typically not affected by local loss of power.

Who will be responsible for monitoring the quality of the public water supply?

The quality of water provided by a public water supply district, such as PWSD#5, is regulated by the state. Periodic and routine monitoring is performed by PWSD#5 and the results are submitted to the state. The water supply wells for PWSD#5 are not located in an area that is expected to be impacted by contaminants, including those being addressed in the EE/CA. The Interim Hydrogeologic Investigation and private well sampling data

indicates that groundwater flow is to the east/southeast, and that the most distant impacted wells are approximately 0.6 miles from the plant site. The closest PWSD#5 well is approximately 2 miles south/southeast of the plant site, on Carron Road.

Furthermore, public or industrial water supply wells are typically constructed to withdraw water from a deeper part of the aquifer than private wells. For example, the PWSD#5 well on Carron Road is approximately 1,000 feet deep and the FFCF plant well is approximately 600 feet deep, while residential wells in the affected area are typically only 250 to 350 feet deep. Data from the plant well confirms that the identified contamination has not extended to that depth (600 feet below ground surface), thus the public water supply wells are expected to remain free of contamination from the FFCF Site and other anthropogenic sources.

Residents who are connected to public water (whose wells are abandoned) should be compensated for their monthly water bills.

As noted above, the proper focus of this non-time critical removal action is to provide a safe drinking water supply to affected residents. When faced with similar circumstances, EPA only considers it appropriate to provide the costs associated with actual connection to city water. Through this connection, a safe water supply can be delivered, which is the proper purpose of the EE/CA.

As described above, local well water contractors indicate that the typical life of private water well components is approximately 15-25 years. The service life of a public water connection is longer and without unpredictable maintenance. According to PWSD#5, the average monthly water bill for their 2,600 current customers is $17.00. Thus, the annual cost for a residential customer is approximately $200.00/year. This cost is expected to be offset by a decrease in home insurance rates and the overall benefits of public water described above.

PWSD#5's current rate schedule is reportedly as follows:

$10.50 for the first 2,000 gallons,
$2.50/1000 gallons for the next 8,000 gallons,
$2.25/1000 for the next 10,000 gallons and,
$2.00/1000 for the next 20,000 gallons.

Residents should be compensated for loss of property value and inconvenience.

The purpose of the EE/CA is to evaluate risks to human health and the environment and to evaluate alternatives for addressing those risks. Through a careful and thoughtful process, Westinghouse and MDNR have evaluated several alternatives to address site conditions and have selected the approach that best satisfies that goal. The extension of public water service (Alternative 4) is the most direct, timely, and certain mechanism to eliminate the risk of exposure to contaminated groundwater. Potential claims related to

compensation for loss of property value and inconvenience are not the proper subject of an EE/CA.

It is possible that the selected action may also directly address the potential diminution of property value. Publicly available information from other sites indicates that property values are not adversely affected after corrective action, such as the installation of public water, has been implemented.

The proposed action will be a disruption for local residents.

Westinghouse recognizes that there may be an inconvenience associated with the construction of the extension of public water service. The design contractor will evaluate options for placement of the service lines to minimize any disruption. We anticipate that the water service lines, like any utility, would be placed along an existing roadway in an easement or right of way. As previously stated, Westinghouse also anticipates pre-qualifying several contractors to make the lateral connections to the homes. Residents will be able to contact one of these parties directly to schedule when the connection to the home will be made. This proposal was offered so that the residents could coordinate the schedule for the work on their properties, thereby minimizing any disruption to their schedule.

Any damage to the roads during the construction of the water supply extension should be repaired.

A local engineering firm has been contracted by Westinghouse and is currently evaluating the most appropriate placement and route for the water service extension. It is likely that the service mains will be placed in an easement or the right of way (along the side of the road), but there will be a number of road crossings necessary. The contractor will be required to restore the road to the original condition. No road improvements (*i.e.*, paving of gravel roads) are needed to implement the EE/CA.

Will owners of the unimproved lots within the identified area, or other property owners outside the identified area, be allowed to connect to the water main?

The long-term operation and maintenance (and ownership) of the water supply extension will be the responsibility of PWSD#5. A letter dated January 10, 2003 from PWSD#5, which is also in the public repository, describes their willingness to service and take ownership of the extension. As such, after the system is constructed, any party can request a connection to the existing service from PWSD#5. PWSD#5 typically makes the connection (tap) at the service main and sets the meter. The resident would engage a contractor to install the lateral water line from the meter to the residence and fund such work. It is expected that the costs for this connection would be less than the costs that would have been otherwise incurred to install a private well.

III. Conclusion

Westinghouse sincerely appreciates the comments submitted by the public and the recent opportunities to meet to discuss the site issues and the evaluation in the EE/CA. Westinghouse believes this responsiveness summary addresses the significant comments regarding the EE/CA and meets the requirements of the NCP and CERCLA.

In summary, Westinghouse believes that the comments received do not substantively alter the conclusion of the EE/CA insofar as Alternative 4 (extension of the public water system) is the most appropriate, timely, and cost effective long term action to address the identified contamination in private water wells. Therefore, the decision announced today in the Action Memorandum calls for the implementation of Alternative 4, including the design and installation of the water supply extension.

The public is welcome to contact Kevin Hayes, Environment, Health and Safety Manager at the Westinghouse plant, with any additional questions or concerns. Mr. Hayes can be reached by telephone at (636) 937-4691, extension 464, or by e-mail at kevin.r.hayes@us.westinghouse.com.